REMARKS

The present amendments and remarks are in response to the Office Action of October 19, 2006. Claims 36-39, 41, 43, and 45-47 are pending in the present application. Claims 1-35, 40, 42, 44, and 48-66 are withdrawn subject to restriction/election requirements. Reconsideration of the application is respectfully requested in view of the following responsive remarks.

In the Office Action of October 19, 2006, the following actions were taken:

(1) Claims 36-39, 43, 45 and 46 were rejected under 35 U.S.C. 102(a) as being anticipated by, or in the alternative, 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application No. 2002/0198287 to Ohta et al. (hereinafter "Ohta"); and

(2) Claims 36-39, 43, and 45-47 were rejected under 35 U.S.C 102(b) as being anticipated by, or in the alternative, 35 U.S.C. 103(a) as being unpatentable over EP 869 160 to Nichols et al. (hereinafter "Nichols").

It is respectfully requested that the presently pending claims be reconsidered and allowed. Applicant submits that each and every amendment herein, and throughout the prosecution of the present application, is fully supported by the specification as originally filed, and that no new matter has been added.

The Examiner has again upheld rejections of claims 36-39, 43, and 45-47 under 35 U.S.C. 102 and 35 U.S.C. 103 over Ohta and Nichols. In response to the previous arguments presented by the Applicant, the Examiner argued that the claims did not require blocking groups to be included in the ink along with the liquid vehicle, colorant and latex particles. In an effort to move prosecution along, the Applicant has amended claim 36 to clearly include released blocking groups as an element in the ink-jet ink. The released blocking groups are a distinct element of the claim and are required in the ink-jet ink.

As before, the Applicant continues to acknowledge that patentability in product-by-process claims is based on the end product itself. Therefore, patentability hinges on the product and not the process used to make the product. In the instant case, patentability is to be determined on the final ink-jet ink composition, and not the methods used to create the ink-jet ink. With that in mind, the process or method used to create the ink, or components of the ink, can produce components with unique characteristics. Such unique characteristics would necessarily carry over into the composition of the ink-jet ink, thus providing a unique composition as a result of the processing.

As stated in the previous office action responses, the Applicant reasserts that the products taught in Ohta and Nichols do not teach the same composition. Evidence of this is taken from the differences in processing, which necessarily produces different compositions. Therefore, the compositions of Ohta and Nichols can not be the same as the claimed composition by virtue of the fact that the presently claimed process in fact yields different products than those disclosed in the cited references.

Such differences will be further elaborated through an analysis of each reference.

The Present Invention

Claim 36 of the present application teaches a latex-containing ink-jet ink, which includes a liquid vehicle, a colorant that is dissolved or dispersed in the vehicle, latex particulates that are dispersed in the liquid vehicle, and released blocking groups in the liquid vehicle. Once again, the Applicant recognizes that, in the case of product by process claims, the product is being claimed, not the process. That being said, the process recited in claim 36 creates inherently distinctive latex particulates and released blocking groups. The latex particulates are formed by a specific process, which requires the preparation of a monomer emulsion that includes an aqueous phase and an organic monomer (dispersed or co-dispersed in the aqueous phase) including at least one blocked acid monomer. In other words, the polymerization (or copolymerization) of the blocked acid monomer occurs moreso within the discontinuous phase of the aqueous emulsion than monomers with acid groups that are not blocked. After polymerization of the organic monomer(s),

which includes at least one blocked acid monomer, blocked acid latex particulates dispersed within the aqueous phase are formed. The blocked acid latex particulates are then unblocked to form acidified latex particulates that are suspended in the aqueous phase, and the aqueous phase forms at least part of the liquid vehicle of the ink-jet ink. Additionally, the process of unblocking the blocked acid latex particulates necessarily releases blocking groups. The presently pending claim 36 was previously amended so as to include the limitation that the blocked acid monomer includes a blocked strong acid group selected from the group consisting of blocked phosphonic acid, blocked phosphinic acid, blocked pyrophosphoric acid, blocked boronic acid, blocked sulfonic acid, blocked sulfinic acid, blocked phosphorous acid, blocked hydroxamic acid, and blocked cyanuric acid.

The Ohta Reference

Ohta teaches an ink-jet ink with a particulate pigment having sulfur-containing dispersibility imparting group on the surface, a penetrating agent, a resin emulsion with the dispersed particulate pigment resin and water. Although the ink has some similarities to the presently claimed ink, there are distinct differences. Specifically, Ohta does not teach the specific latex particulates of the present invention, nor does it teach the released blocking groups.

An examination of the processes used in Ohta show clearly that the reference does not teach the actual latex claimed in the present invention. As discussed in previous responses, Ohta teaches that the sulfonated latex particles used in its ink can be made in two different ways. First, the sulfonated dispersibility-imparting group can be part of the monomer structure of the constituent resin and then polymerized. Second, the a base polymer or skeletal backbone of styrene-(meth)acrylic acid is made without the sulfur containing dispersibility-group. Then the already polymerized styrene copolymer can be altered so that the dispersibility–imparting group is grafted to the skeletal backbone of the styrene copolymer. In other words, the monomers are polymerized together first and then a sulfur containing group is grafted. See Paragraph 59 of the Ohta specification. Neither process teaches the process as claimed to form the latex particulates. Furthermore, Ohta does

not teach the use of blocking groups, and therefore does not teach the inclusion of released blocking groups in the ink-jet ink.

As noted previously, the presently claimed process for forming latex particulates produces a unique latex particulate having distinct qualities. Such qualities are better understood as they relate to the interaction of the monomers and the latex in the ink. As is generally known in the art, latex particulate surface charge is typically created through emulsion polymerization of an acid monomer, with or without other monomers, to form latex particulates. Such acid monomers should be sufficiently hydrophobic to substantially remain in the organic phase of the emulsion that forms the particles. The need for hydrophobicity has limited effective polymer design to the use of relatively weak organic acids, typically carboxylic acids, having correspondingly low ionization. Thus, monomers including strong acids (such as sulfonates, phosphonates, etc.), or monomers including multiple acids (such as di-acids), are excessively water soluble for typical emulsion polymerization processes. Moreover, strong acid monomers or multiple acid monomers tend to migrate out of the organic phase and into the water phase where they form detrimental water-soluble and ion-bearing polymers. The resultant increase in the ionic strength of the aqueous phase of the latex dispersion reduces the effect of the charge surrounding each particle, weakening particle dispersion stability. This is why the process of manufacturing the latex is so important, and why the process of manufacture affects the final compositional properties.

As described above, the sulfur containing polymer latex used in Ohta can be manufactured in two ways. The first method of incorporating sulfur containing dispersibility-groups involves polymerizing monomers which already have sulfur containing groups attached thereto. The monomers are polymerized together using emulsion polymerization to yield a copolymer having sulfur containing groups at least on the surface. As mentioned previously, this type of polymerization is problematic in that the strong acid or sulfur containing monomers have the tendency to migrate out of the organic phase and into the water phase prior to polymerization because of their high solubility. This results in a latex solution that has high concentrations of sulfur

containing monomers in the aqueous phase thereby weakening the desired effect of stable particle dispersion. It is worth noting that it is this exact type of problem that the claimed composition and the associate method of latex manufacture of the present invention is intended to overcome.

Likewise, the second method of incorporating the sulfur containing dispersibility group also yields a distinct latex composition when compared to that made by the currently claimed. Polymerizing the monomers and then grafting on the dispersibility imparting group yields a latex polymer emulsion with residual dispersibility-imparting groups in the aqueous phase (see paragraph 70 of Ohta).

Therefore, Ohta does not teach the presently claimed latex. Ohta also does not teach the released blocking groups in the ink. As the ink composition of claim 36 is distinct over those taught in Ohta, it is respectfully requested that all rejections with respect to this reference be withdrawn.

Rejections over Nichols

The Examiner upheld rejections to claims 36-39, 43, and 45-47 under 35 U.S.C. 102 and 103 as being either anticipated by or unpatentable over Nichols. Nichols teaches an ink composition including an ink vehicle and a resin emulsion of resin particles and a pigment colorant. The resin emulsion is an emulsion polymerized resin of monomers having carboxylic acid groups. Once again, there is no teaching of blocking the acid group prior to polymerization and unblocking the acid group after polymerization. Therefore, the ink composition does not contain released blocking groups, nor the latex particulates as presently claimed. In the present Office Action, the Examiner argues that there is no requirement of released blocking groups in the ink composition. By the present amendment, it should be clear that the ink does specifically claim released blocking groups as a requirement. Therefore, it is respectfully requested that all rejections based on this reference be withdrawn and all the claims be allowed.

CONCLUSION

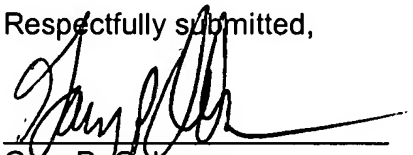
In view of the foregoing, Applicant believes that claims 36-39, 43, and 45-47 present allowable subject matter and allowance is respectfully requested. It is also submitted that at least claim 40 be rejoined upon allowance of claim 36.

If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone W. Bradley Haymond (Registration No. 35,186) at (541) 715-0159 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025

Dated this the 19th day of January, 2007.

Respectfully submitted,



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